

1 ABSTRACT OF THE DISCLOSURE

2 A Pull-back Method of Forming Fins in FinFETs

3 A method of forming integrated circuits having FinFET transistors includes
4 a method of forming sub-lithographic fins, in which a mask defining a block
5 of silicon including a pair of fins is reduced in width or pulled back by the
6 thickness of one fin on each side, after which a second mask is formed
7 around the first mask, so that after the first mask is removed, an aperture
8 remains in the second mask having the width of the separation distance
9 between the pair of fins. When the silicon is etched through the aperture,
10 the fins are protected by the second mask, thereby defining fin thickness by
11 the pullback step. An alternative method uses lithography of opposite
12 polarity, first defining the central etch aperture between the two fins
13 lithographically, then expanding the width of the aperture by a pullback
14 step, so that filling the widened aperture with an etch-resistant plug defines
15 the outer edges of the pair of fins, thereby setting the fin width without an
16 alignment step.